AMENDMENTS TO THE CLAIMS

This listing of the claims replaces all prior versions, and listings of the claims in the application:

1. (Original) A radial impeller comprising:

a hub attachable to a rotating shaft;

an impeller body attached to the hub and extending radially from the hub to a perimeter of the impeller and having opposed radial faces; and

a plurality of impeller blades disposed on one face of the impeller body, each impeller blade extending from a leading end of the blade generally adjacent the hub toward a trailing end of the blade generally at the perimeter of the impeller, wherein an inlet area is defined between each pair of adjacent blades generally adjacent the hub, with each inlet area being defined as the area at the radius of the leading end of the adjacent blades bounded by a height of the leading end of the adjacent blades and the one face of the impeller body, and wherein an outlet area is defined between each pair of adjacent blades generally adjacent the perimeter of the impeller, with each outlet area being defined as the area at the radius of the trailing end of the adjacent blades bounded by the height of the trailing end of the adjacent blades and the one face of the impeller body, wherein each inlet area is substantially equal to each corresponding outlet area for each pair of adjacent blades.

2. (Original) The radial impeller of claim 1, further comprising partial blades disposed on the one face of the impeller body between each pair of blades, wherein the partial blades extend from a position radially outward of the inlet area to the perimeter of the impeller.

3. (Original) The radial impeller of claim 1, further comprising an axially extending skirt attached to the impeller body at the perimeter of the impeller, the skirt extending from an opposite face of the impeller body.

4. (Original) The radial impeller of claim 1, wherein the blades are backward curved blades generally decreasing in height from the leading end to the trailing end.

5. (Original) The radial impeller of claim 1, wherein the hub includes a smooth outer surface curving radially outwardly toward the inlet areas.

6. (Original) The radial impeller of claim 1, wherein the impeller is a one-piece, injection molded impeller.

7. (Original) The radial impeller of claim 1, wherein a radial area between adjacent blades, which is an area between adjacent blades at a radial position from the hub and that is bounded by the height of the adjacent blades at the radial position and the one face of the impeller body, is substantially the same over a length of the pair of adjacent blades.

8. (Original) A pressure generator comprising:

(a) a housing having a gas inlet and a gas outlet;

(b) a motor;

(c) a rotatable drive shaft driven by the motor; and

(d) an impeller mounted on the drive shaft and disposed within the housing, the impeller comprising:

(1) a hub attached to the drive shaft,

(2) an impeller body attached to the hub extending radially from the hub to a perimeter of the impeller, and

(3) a plurality of impeller blades disposed on one face of the impeller body, each impeller blade extending from a leading end of the blade generally adjacent the hub toward a trailing end of the blade generally at the perimeter of the impeller, wherein an inlet area is defined between each pair of adjacent blades generally adjacent the hub, with each inlet area being defined as the area at the radius of the leading end of

the adjacent blades bounded by a height of the leading end of the adjacent blades and the one face of the impeller body, and wherein an outlet area is defined between each pair of adjacent blades generally adjacent the perimeter of the impeller, with each outlet area being defined as the area at the radius of the trailing end of the adjacent blades bounded by the height of the trailing end of the adjacent blades and the one face of the impeller body, wherein each inlet area is substantially equal to each corresponding outlet area for each pair of adjacent blades.

9. (Original) The pressure generator of claim 8, further comprising partial blades disposed on the one face of the impeller body between each pair of blades, wherein the partial blades extend from a position radially outward of the inlet area to the perimeter of the impeller.

10. (Original) The pressure generator of claim 8, further comprising an axially extending skirt attached to the impeller body at the perimeter of the impeller, the skirt extending from an opposite face of the impeller body.

11. (Original) The pressure generator of claim 8, wherein the blades are backward curved blades generally decreasing in height from the leading end to the trailing end.

12. (Original) The pressure generator of claim 8, wherein the hub includes a smooth outer surface curving radially outwardly toward the plurality of inlet areas.

13. (Original) The pressure generator of claim 8, wherein the housing outlet has an arithmetically increasing cross sectional area extending at least partially around the perimeter of the impeller.

14. (Original) The pressure generator of claim 8, wherein the housing follows the contour of the height of the blades.

15. (Original) The pressure generator of claim 8, wherein a radial area between adjacent blades, which is an area between adjacent blades at a radial position from the hub and that is bounded by the height of the adjacent blades at the radial position and the one face of the impeller body, is substantially the same over a length of the pair of adjacent blades.

Claims 16-23 (Cancelled).

24. (Original) A method of supplying a flow of gas comprising:

(a) providing a source of gas;

(b) pressurizing the gas to a selected constant pressure in a pressure generating system comprising:

(1) a housing having a gas inlet and a gas outlet,

(2) a motor,

(3) a rotatable drive shaft driven by the motor, and

(4) an impeller mounted on the drive shaft and disposed within the housing, the impeller comprising:

(i) a hub attached to the drive shaft,

(i) an impeller body attached to the hub extending radially from the hub to a perimeter of the impeller, and

(iii) a plurality of impeller blades disposed on one face of the impeller body, each impeller blade extending from a leading end of the blade generally adjacent the hub toward a trailing end of the blade generally at the perimeter of the impeller, wherein an inlet area is defined between each pair of adjacent blades generally adjacent the hub, with each inlet area being defined as the area at the radius of the leading end of the adjacent blades bounded by a height of the leading end of the adjacent blades and the one face of the impeller body, and wherein an outlet area is defined between each pair of adjacent blades

generally adjacent the perimeter of the impeller, with each outlet area being defined as the area at the radius of the trailing end of the adjacent blades bounded by the height of the trailing end of the adjacent blades and the one face of the impeller body, wherein each inlet area is substantially equal to each corresponding outlet area for each pair of adjacent blades; and

c) delivering the pressurized gas to an external location using a gas carrying conduit coupled to the gas outlet of the housing.

Claims 25-30 (Cancelled).

31. (Original) A method of supplying gas comprising:

(a) providing a source of breathing gas;

(b) providing a pressure generator comprising:

(1) a motor,

(2) a rotatable drive shaft driven by the motor, and

(3) an impeller mounted on the drive shaft;

(c) pressurizing gas from the source of breathing gas via the pressure generator such that the pressure generator outputs a substantially constant pressure over a range of flows from 10-150 l/min, wherein the pressure generator delivers the substantially constant pressure, which is a pressure selected from a range of pressures between 10-65 cmH_2O; and

(d) supplying the pressurized gas from the pressure generator to the patient through a patient circuit.

32. (Original) The method of claim 31, wherein pressuring the gas includes outputting the flow of breathing gas such that at a standard deviation from a selected pressure, which is a pressure selected form a range of pressure from 10-65 cmH_20, is not greater than 1.5 cmH_2O.

33. (Original) The method of claim 31, wherein pressuring the gas includes outputting the flow of breathing gas such, at a constant rotational speed, as the output flow increases, the substantially constant pressure increases slightly over at least a portion of the range of flows from 10-150 l/min.